Texas Emergency / Trauma System Outcome Review

Mortality Review

The State Trauma Registry will define the top three E-Codes causing mortality in each RAC as well as the State from 1999 forward.

Top E- codes	1999	2000	2001	2002	2003	2004

The State Trauma Registry will compare the E-Codes for mortality in Texas to the National and Regional causes of mortality from 1999 forward.

Top E-Codes	National E-Codes	Texas Mortality	National E-codes	Texas Mortality	National E- codes for	Texas Mortality E-
Codes	for	E-Codes	for	E-codes for	Mortality	codes for
	Mortality	2002	Mortality	Mortality	2004	Mortality
	2002		2003	2003		2004

The Department of Epidemiology will calculate Texas' overall trauma mortality by including those individuals that die at the scene as well as those that die in hospitals as a result of trauma injuries from 1999 forward.

Mortality	1999	2000	2001	2002	2003	2004
Scene						
trauma						
deaths						
Hospital						
trauma						
deaths						
Total						

Causes of Injury

The State Trauma Registry will define the top five E-Codes that cause activation of the 911 and EMS system from 1999 forward.

E-Codes Activating 911 / EMS	1999	2000	2001	2002	2003	2004

The State Trauma Registry will define the top five E-codes that cause trauma admission from 1999 forward.

Trauma	1999	2000	2001	2002	2003	2004
Center						
Admission						
E-Codes						

Unable to capture

The Department of Epidemiology will define the top five injury E-Codes that cause individuals to seek emergency health care from 1999 forward.

Emergency	1999	2000	2001	2002	2003	2004
Department						
Evaluation E-Codes						

Regional Assessment

Each RAC will have defined protocols for EMS Field Triage.

RAC	A	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

All EMS agencies participating in the RAC have linked the regional field triage protocols to their standards of operation.

RAC	A	В	C	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

All trauma centers participating in the RAC have linked their trauma activation protocols to the filed triage protocols.

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RAC	A	В	C	D	Е	F	G	Н	Ι	J	K	L	M	N	Ο	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

All trauma centers participating in the RAC will monitor their over and under triages.

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RAC	A	В	С	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						

2005											

All RACs will monitor the number of mis-traiges through their system performance improvement process.

RAC	A	B	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have define protocols for Bypass and helicopter auto-launch.

<u> </u>								_	_					1								
RAC	A	В	C	D	E	F	G	Н	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
																						<u> </u>
1999																						
2000																						
2001																						
2003																						
2004														·	·							
2005																						

Each RAC will monitor scene responses by air medical services and ensure that the trauma patient is transported to the highest level of trauma care assessable within a thirty-minute flight time (or time defined by the RAC).

RAC	A	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	Т	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have regional Trauma Transfer guidelines that expedites transfers.

RAC	A	В	С	D	F	G	Н	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1999																					
2000																					
2001																					
2003																					
2004																					

2005											

Each RAC will establish a trauma transfers completion time of two hours (time admitted to receiving hospital's emergency department to the time patient was transferred to higher level of trauma center).

10 / 01 01				- , .																		
RAC	A	В	С	D	Е	F	G	Н	Ι	J	K	L	M	Ν	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have injury prevention programs that target their high volume E-Codes and the E-Codes that produce mortality.

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RAC	A	В	C	D	Е	F	G	Η	Ι	J	K	L	M	N	O	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005														·								

Each RAC will monitor their transfers out of the RAC as well as the transfers-in from out of RAC from 1999 forward.

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RAC	A	В	C	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have mechanisms established to define the trips and hours that EMS must travel out of their catchment area due to diversions, or trauma center closures.

					-							, -										
RAC	A	В	С	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						

2003											
2004											
2005											

Each RAC will have systems in place to monitor diversion activities.

RAC	A	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will define the average scene response times and average transport times and monitor variances.

RAC	A	В	C	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

All EMS medical directors should participate in the RAC activities and have offices within the defined region.

***************************************				- 0																		
RAC	A	В	C	D	Е	F	G	Н	I	J	K	L	M	N	Ο	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

All air medical service medical directors should participate in the RAC activities and have offices within the defined region.

RAC	A	В	C	D	E	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						

2003											
2004											
2005											

All designated trauma centers should participate in the RAC committees and activities.

RAC	A	В	С	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Define the number of designated trauma facilities from 1999 forward.

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Trauma	1999	2000	2001	2002	2003	2004
Facilities						
Level IV						
Level III						
Level II						
Level I						

Define the number of physician trauma providers participating in the RAC from 1999 forward.

101 ward.						
Trauma	1999	2000	2001	2002	2003	2004
physicians						
Trauma						
surgeons						
Emergency						
Medicine						
Anesthesia						
Ortho						
Neuro						

Define the number of trauma facilities that dropped out of the trauma system from 1999 forward.

Trauma	1999	2000	2001	2002	2003	2004
Facilities						
Level IV						
Level III						
Level II						
Level I						

Define the number of trauma facilities that provide physician trauma on-call compensation for the following disciplines:

Emergency Medicine Trauma / General Surgery Orthopedics Neurosurgery Anesthesia

For these same group of physicians define if their on-call compensation increased from 2003 to 2005.

Define the number of EMS providers who expanded their coverage or upgraded their services from 1999 forward.

BET VICES ITO	11 1777 101 W	uru.				
EMS	1999	2000	2001	2002	2003	2004
Upgrades						
Fire-						
Based						
EMS						
Hospital						
Based						
EMS						
Private						
EMS						
Volunteer						
EMS						

Define the number of EMS agencies that discontinued their services or down graded their services from 1999 forward.

501 11000 110	111 1/// 101 11	ar a.				
EMS	1999	2000	2001	2002	2003	2004
Upgrades						
Fire-						
Based						
EMS						
Hospital						
Based						
EMS						
Private						
EMS						
Volunteer						
EMS						

Define the number of air medical services that have expanded their services or upgraded their services from 1999 forward.

	5 H 0 H 1 7 7 7					
Air	1999	2000	2001	2002	2003	2004
Medical						
Upgrades						
Fire-						
Based						
Hospital						
Based						
Private						
Other						

Define the number of RAC air medical services available from 1999 forward.

RAC	A	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Disaster / Crisis Management Response

Each RAC will have systems in place to notify all EMS providers and hospitals of activation of a mass casualty response.

						_	_															
RAC	Α	В	C	D	Е	F	G	Η	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
																	,					
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have systems in place that can define capacity within the region during a mass casualty response for the following:

Services available

Decontamination capabilities

ICU capabilities

Isolation capabilities

Helipad access

EMS ambulance capabilities

Air medical service capabilities

Each RAC will have systems in place for interoperative communication between public health, local emergency planning center, police, fire, EMS, and hospitals.

RAC	A	В	C	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have systems in place for public notification and education in mass casualty situations.

RAC	A	В	C	D	Е	F	G	Н	I	J	K	L	M	N	Ο	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have collaborative traffic and access plans for EMS routes to each trauma center.

RAC	A	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have systems in place to coordinate, manage, evaluate and track mass movement of casualty patients from their RAC to another RAC.

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RAC	A	В	С	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	Т	U	V
1000																						
1999																						
2000																						
2001																						
2003																						
2004																						

2005		
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Each RAC will have systems in place to notify DSHS and the Governor's office of movement of mass casualty patients from one RAC to another RAC.

RAC	A	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC will have systems in place to critique all activation of mass casualty response.

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RAC	Α	В	C	D	Е	F	G	Η	I	J	K	L	M	N	Ο	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Education

Each RAC can define the number of educational programs for the trauma providers from 1999 forward. Providers include Emergency Medicine Physicians or physicians that provide coverage in the emergency department, general surgeons participating in the trauma program, nurses providing care to trauma patients, Dispatch personnel, EMS providers participating in the trauma system, EMS Medical Directors, allied health providers participating in the trauma system,

RAC	À	В	С	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

Each RAC can define the number of specific trauma provider courses offered from 1999 and forward. These courses include but are not limited to:

Annual conferences / seminars

BTLS / PHTLS

Farm Medic

ATLS

ATCN

TNCC

ENPC / PALS

CATN

SANE Nurse Examiner Courses

Pediatric trauma courses

Geriatric trauma courses

OB trauma courses

Suicide awareness

Alcohol awareness

BDLS / ADLS

Bioterrorism / disaster training

Injury Prevention

Define the RACs participation in Injury Prevention Coalitions from 1999 forward.

RAC	A	В	Ĉ	D	Е	F	G	Н	Ι	J	K	L	M	N	О	P	Q	R	S	T	U	V
1000																						
1999 2000																						
2001																						
2003																						
2004																						
2005																						

Define the RACs participation in the following injury prevention programs from 1999 forward.

Child safety seat programs (define how many seats were distributed)

Bicycle helmet programs (define how many helmets were distributed)

Violence prevention programs

Domestic/family violence prevention programs

Firearm injury prevention programs

Vehicle crash prevention

Suicide prevention programs

Specific teenage suicide prevention programs

Teenage vehicle crash injury prevention programs

Alcohol prevention/interventions programs Geriatric fall prevention programs Geriatric vehicle crash prevention programs

RAC injury prevention programs are based on data from the regional trauma registry or the state database.

RAC	A	В	С	D	Е	F	G	Н	I	J	K	L	M	N	О	P	Q	R	S	T	U	V
1999																						
2000																						
2001																						
2003																						
2004																						
2005																						

OUTCOME REVIEW

ISS OF 25 or Higher

100 01 20 01 1119	,				
Trauma Facility	Total Number of Patients	Average LOS	Average ICU LOS	Average Cost	# of Deaths
Level I					
Level II					
Level III					
Level IV					

ISS of 15 to 24

Trauma Facility	Total Number of Patients	Average LOS	Average ICU LOS	Average Cost	# of Deaths
Level I					
Level II					
Level III					
Level IV					

ISS of 9 to 14

Trauma Facility	Total	Average	Average ICU	Average	# of Deaths
	Number of	LOS	LOS	Cost	
	Patients				
Level I					
Level II					
Level III					
Level IV					

ISS of 0-8

Trauma Facility	Total Number of	Average LOS	Average ICU LOS	Average Cost	# of Deaths
	Patients				
Level I					
Level II					
Level III					
Level IV					

CONSIDER EVALUATION OF MECHANISM CRITERIA FOR TRAUMA ACTIVATION:

Rollover, unrestrained driver
Intrusions greater than 12 inches
Death of occupant in vehicle
Child with airbag deploy
ATV or motorized recreational vehicle with driver / rider separation
Bullet vehicle crashes with non-compatible vehicles